

High-precision · anti-surge thick film chip resistors HPZ series

HPZ10 (0805) HPZ18 (1206) HPZ33 (1210)

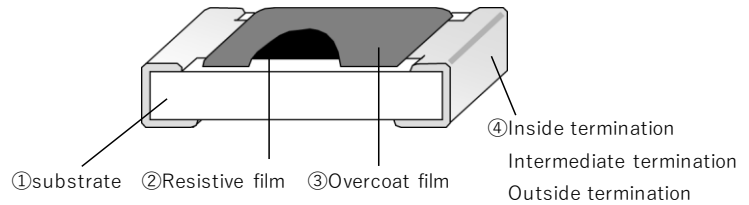
*(): Inch size

Not recommended : HPZ18(1206), HPZ33(1210)

■ Features

- Guaranteed 0805 size 0.25W
- $\pm 0.5\%$ resistance tolerance is in lineup.
- RoHS qualified
- ELV qualified
- AEC-Q200 qualified

■ Structure



*This is only a schematic drawing of the structure.

■ Part No. Explanation (Example)

H	P	Z	1	0	C	T	1	0	3	D
Product type			Rated power and Size		T.C.R	Packaging form	Nominal resistance value(*)			Resistance tolerance
HPZ : High-precision · anti-surge			10:0.25W,0805 18:0.33W,1206 33:0.5W,1210		C: ± 50 ($10^{-6}/^{\circ}\text{C}$)	T : 4mm pitch taping $\phi 180$ reel	The resistance value is indicated by 3-digit numbers. E96 sequence products Indicated by a 4-digit.			D: $\pm 0.5\%$

*The first two numbers are significant numbers,

and the third one is the number of zeros "0" following to the first two numbers (multiple of 10).

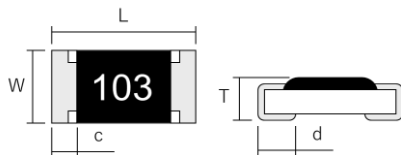
*In the case of the E96 sequence,

the first three values mean the significant figures and

the fourth one represents the number of 0 following to them (multiplier of 10).

*If there is a decimal point in resistance value, it is indicated by "R" and all numbers are significant numbers.

■ Dimensions



* External dimensions are for reference only.

Overcoat film color :

HPZ10 Green, HPZ18, HPZ33 navy blue

The resistance value is indicated by 3-digit numbers.

The product of the E96 sequence is indicated by 4-digit numbers.

	L	W	T	c	d
HPZ10	2.00 ± 0.15	1.25 ± 0.15	$0.55 \begin{matrix} +0.10 \\ -0.05 \end{matrix}$	$0.25 \begin{matrix} +0.20 \\ -0.10 \end{matrix}$	0.40 ± 0.15
HPZ18	$3.10 \begin{matrix} +0.20 \\ -0.10 \end{matrix}$	1.55 ± 0.15	$0.55 \begin{matrix} +0.10 \\ -0.05 \end{matrix}$	0.35 ± 0.20	$0.50 \begin{matrix} +0.20 \\ -0.15 \end{matrix}$
HPZ33	$3.10 \begin{matrix} +0.20 \\ -0.10 \end{matrix}$	2.60 ± 0.15	0.60 ± 0.10	0.35 ± 0.20	$0.50 \begin{matrix} +0.20 \\ -0.15 \end{matrix}$

Not recommended : HPZ18(1206), HPZ33(1210)

(Unit: mm)

■ Ratings

	Rated power	Limiting element voltage(*1)	Maximum overload voltage(*2)	Range of rated resistance	Tolerance on rated resistance	Category temperature range	Temperature Coefficient of Resistance(T.C.R)	
HPZ10	0.25W	150V	200V	10Ω~1MΩ	D(±0.5%)	-55°C~+155°C	C	± 50 × 10 ⁻⁶ /°C
HPZ18	0.33W	200V	400V	10Ω~1MΩ	D(±0.5%)	-55°C~+155°C	C	± 50 × 10 ⁻⁶ /°C
HPZ33	0.5W	200V	400V	10Ω~1MΩ	D(±0.5%)	-55°C~+155°C	C	± 50 × 10 ⁻⁶ /°C

(*1) Rated voltage = $\sqrt{\text{Rated power} \times \text{Resistance value}}$

In the case of rated voltage over above limiting element voltage, limiting element voltage will be the maximum.

(*2) The applied voltage in short time overload test = 2.5 × rated voltage

In the case of the applied voltage in short time overload test over above maximum overload voltage, maximum overload voltage will be the maximum.

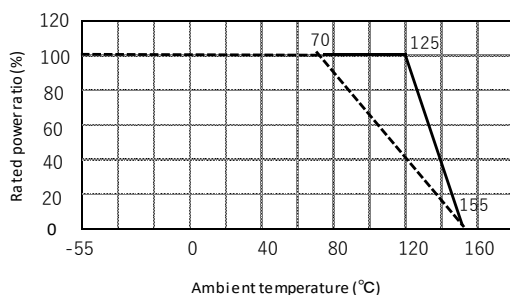
* There are the supplementary information about rating on reference page.

* Temperature Coefficient of Resistance (T.C.R) is based on JIS C5201-1 6.2 between two points: 25°C and 125°C.

■ Specifications and test methods

Item	Specifications	Test method
Overload	± (2%+0.05Ω)	JIS C5201-1 8.1 2.5 × Rated voltage, for 5 seconds
Bend strength of the face plating	± (1%+0.05Ω)	JIS C5201-1 9.8 Bending distance : 3mm
Resistance to soldering heat	± (1%+0.05Ω)	JIS C5201-1 11.2 260 ± 5°C.10(sec.)
Solderability	Covered with more than 95%	JIS C5201-1 11.1 245 ± 3°C.2(sec.)
Rapid change of temperature	± (1%+0.05Ω)	JIS C5201-1 10.1 -55°C ⇄ +125°C, 1000 ㊦ (times)
Loadlife in humidity	± (3%+0.05Ω)	60 ± 2°C.90~95% R.H 1000h
Endurance at 70°C	± (3%+0.05Ω)	JIS C5201-1 7.1 70 ± 2°C.1000h

■ Derating curve



* Rated power of the resistor is the maximum power which can be loaded continuously at the ambient temperature of 70°C. For the ambient temperature above 70°C, please use according to the load derating curve (dotted line). Please note that the component surface temperature does not exceed operating temperature range.

* If the component temperature is below 155°C, the power rating can be used according to the load derating curve in the solid line.